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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,010	09/05/2003	Kyosuke Achiwa	16869S-026610US	1740

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EXAMINER	
BAKER, PAUL A	

ART UNIT	PAPER NUMBER
2188	

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/657,010	ACHIWA ET AL.	
	Examiner	Art Unit	
	Paul A Baker	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-20,23-25* is/are rejected.

7)☒ Claim(s) *21 and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/854,125.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 5 September 2003 has been entered.

Claim Objections

Claims 18, 19, 20, 21, 22, 24, 25 are objected to because of the following informalities: a comma should be placed after the dependency clause (after the number of the claim which the claim is dependent on). Appropriate correction is required.

Claim 25 is objected to because of the following informalities: line six "second system" should be "second storage system". Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 17-20, 23-25 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4 and 5 of U.S. Patent No. 6,643,750. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Continuation App, 10/657,010; Claim 17	Parent App, US Patent 6,643,750; Claim 4
A computer system comprising:	A storage system comprising:
a first storage system comprising a first disk controller for receiving data from a host computer and one or more first disks each of which is coupled to the first disk controller;	a first storage apparatus comprising a first disk controller for receiving data from a host computer and one or more first disks each of which is in data communication with the first disk controller;
a second storage system comprising a second disk controller and one or more second disks each of which is coupled to the second disk controller; and	a second storage apparatus comprising a second disk controller and one or more second disks each of which is coupled to the second disk controller; and
a network to which the first storage system and the second storage system are operatively coupled,	a network to which the first storage apparatus and the second storage apparatus are coupled,
wherein the first disk controller stores data	the first disk controller being configured to

received from the host computer to a first storage area of the first storage system	store data received from the host computer into a first storage area of the first storage apparatus,
and sends the data to the second storage system,	the first disk controller further being configured to send data stored in the first storage area to the second disk controller,
wherein the second disk controller stores data received from the first disk controller to a third storage area of the second storage system,	the second disk controller being configured to store data received from the first disk controller into a third storage area in the second storage apparatus,
wherein, after the first storage system receives a first instruction from the host computer, the first disk controller:	wherein the first disk controller is further configured to: receive, from the host computer, an instruction to hold data;
sends to the second disk controller, as received data, first data that is stored in the first storage area at a time when the first instruction was received;	send, to the second disk controller, stored data that is stored in the first storage area at a time the instruction to hold data has been received;
receives from the host computer update data corresponding to the first data; and	receive subsequent data from the host computer, after receiving the instruction and before completion of sending the stored data,

manages the update data such that the update data can be distinguished from the first data,	[inherent, claim delineates a (first) data and subsequent (update) data, if a system has two types of data it inherently manages both types of data and since they are sent at two different times they are inherently distinguishable]
	and to store the subsequent data into the first storage area of the first storage apparatus if the subsequent data is new data corresponding to a portion of the stored data that has been already sent to the second storage apparatus; and to store the subsequent data into a second storage area of the first storage apparatus if the subsequent data is new data corresponding to a portion of the stored data that has not yet been sent to the second storage apparatus;
wherein the second disk controller stores the received data to the third storage area,	the second disk controller being configured to store data received from the first disk controller into a third storage area in the second storage apparatus,

wherein the first disk controller sends a second instruction to the second disk controller,	send a first signal to the second disk controller indicating the completion of sending the store data;
and after the second instruction is sent, the first disk controller sends the update data to the second disk controller.	and send the subsequent data to the second disk controller, after sending the first signal.

Since inherency is the epitome of obviousness, *Graham v Deere* analysis is not required for the 11th limitation (12th row of table).

Continuation App, 10/657,010; Claim 18	Parent App, US Patent 6,643,750; Claim 5 (relevant parts)
The computer system of claim 17, wherein after the second disk controller receives the second instruction from the first disk controller, the second disk controller stores the received first data from the third storage area to a fourth storage area in the second storage system	A storage system of claim 4, wherein the second controller is further configured to: copy data stored in the third storage area to a fourth storage area of the second storage apparatus, after receiving the first signal;
and manages the received update data such that the update data can be	[inherent; parent claim delineates a (first) data and subsequent (update) data, if a

distinguished from the first data.	system has two types of data it inherently manages both types of data and since they are sent at two different times they are inherently distinguishable]

Since inherency is the epitome of obviousness, *Graham v Deere* analysis is not required for the 3rd limitation (3rd row of table).

Continuation App, 10/657,010; Claim 19	Parent App, US Patent 6,643,750; Claim 4 (relevant parts)
The computer system of claim 18, wherein after the first instruction from the host computer is received at the first storage system, the first disk controller stores the update data either to the first storage area if the corresponding first data was already sent to the second storage system or to a second storage area in the first storage system if the corresponding first data was not sent to the second storage system.	and to store the subsequent data into the first storage area of the first storage apparatus if the subsequent data is new data corresponding to a portion of the stored data that has been already sent to the second storage apparatus; and to store the subsequent data into a second storage area of the first storage apparatus if the subsequent data is new data corresponding to a portion of the stored data that has not yet been sent to the second storage apparatus;

Continuation App, 10/657,010; Claim 20	Parent App, US Patent 6,643,750; Claim 5 (relevant parts)
The computer system of claim 19, wherein before completion of storing the first data stored to the fourth storage area, the second disk controller stores the update data to a fifth storage area in the second storage system so that the first data can be distinguished from the update data in the second storage system.	send a second signal indicating the completion of copying data from the third storage area to the fourth storage area; and store data that is received from the first controller after receiving the first signal and before sending the second signal, into a fifth storage area of the second storage apparatus.

Continuation App, 10/657,010; Claim 23	Parent App, US Patent 6,643,750; Claim 4
A first storage system comprising:	A storage system comprising:
a disk controller for receiving data from a host computer; and one or more disks each of which is coupled to the disk controller;	A first storage apparatus comprising a first disk controller for receiving data from a host computer and one or more first disks each of which is in data communication with the first disk controller;
	A second storage apparatus comprising a second disk controller and one or more second disks each of which is coupled to

	the second disk controller; and
	A network to which the first storage apparatus and the second storage apparatus are coupled,
wherein the disk controller stores data received from the host computer to a first storage area of the first storage system	the first disk controller being configured to store data received from the host computer into a first storage area of the first storage apparatus,
and sends the data to a second storage system,	the first disk controller further being configured to send data stored in the first storage area to the second disk controller,
	the second disk controller being configured to store data received from the first disk controller into a third storage area in the second storage apparatus,
wherein after a first instruction from the host computer is received at the first storage system, the disk controller:	wherein the first disk controller is further configured to: receive, from the host computer, an instruction to hold data;
sends to the second storage system, as received data, first data that is stored in the first storage area at a time the first	send, to the second disk controller, stored data that is stored in the first storage area at a time the instruction to hold data has

instruction has been received;	been received;
receives from the host computer update data corresponding to the first data; and	receive subsequent data from the host computer, after receiving the instruction and before completion of sending the stored data,
manages the update data such that the update data can be distinguished from the first data,	[inherent, claim delineates a (first) data and subsequent (update) data, if a system has two types of data it inherently manages both types of data and since they are sent at two different times they are inherently distinguishable]
	and to store the subsequent data into the first storage area of the first storage apparatus if the subsequent data is new data corresponding to a portion of the stored data that has been already sent to the second storage apparatus; and to store the subsequent data into a second storage area of the first storage apparatus if the subsequent data is new data corresponding to a portion of the stored data that has not yet been sent to the

	second storage apparatus;
wherein the disk controller sends a second instruction to the second storage system to make the second storage system hold the first data when transmission of the first data is completed.	send a first signal to the second disk controller indicating the completion of sending the store data; and send the subsequent data to the second disk controller, after sending the first signal.

Since inherency is the epitome of obviousness, *Graham v Deere* analysis is not required for the 8th limitation (12th row of table).

Continuation App, 10/657,010; Claim 24	Parent App, US Patent 6,643,750; Claim 4 (relevant portions)
The storage system of claim 23, wherein after the first instruction from the host computer is received at the first storage system, the disk controller stores the update data to the first storage area if the corresponding first data was already sent to the second storage system,	and to store the subsequent data into the first storage area of the first storage apparatus if the subsequent data is new data corresponding to a portion of the stored data that has been already sent to the second storage apparatus;
and the disk controller stores the update	and to store the subsequent data into a

data to a second storage area in the first storage system if the corresponding first data was not yet been sent to the second storage system.	second storage area of the first storage apparatus if the subsequent data is new data corresponding to a portion of the stored data that has not yet been sent to the second storage apparatus;

Continuation App, 10/657,010; Claim 25	Parent App, US Patent 6,643,750; Claim 4 (relevant portions)
The computer system of claim 23 wherein after the first instruction from the host computer is received at the first storage system:	wherein the first disk controller is further configured to: receive, from the host computer, an instruction to hold data;
the disk controller stores the first data in the first storage area to a second storage area in the first storage system; the disk controller sends the first data stored in the second storage area to the second system, if the first data has not yet been sent to the second storage system, and	and to store the subsequent data into a second storage area of the first storage apparatus if the subsequent data is new data corresponding to a portion of the stored data that has not yet been sent to the second storage apparatus;
the disk controller stores the update data to the first storage area after corresponded	and to store the subsequent data into the first storage area of the first storage

first data is stored in the second storage area.	apparatus if the subsequent data is new data corresponding to a portion of the stored data that has been already sent to the second storage apparatus;

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17,23+25 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohran, US Patent WO 98/20419.

In regards to claim 17, Ohran discloses a computer system comprising:

a first storage system in figure 3 all elements to the left of element 16 comprising a first disk controller element 42 for receiving data from a host computer element 44 and one or more first disks each of which is coupled to the first disk controller element 20;

a second storage system figure 3 all elements to the right of element 16 comprising a second disk controller (inherent in element 60) and one or more second disks each of which is coupled to the second disk controller element 24; and

a network to which the first storage system and the second storage system are operatively coupled figure 3 element 16,

wherein the first disk controller stores data received from the host computer to a first storage area of the first storage system in figure 7a element 136 subelement 6a and sends the data to the second storage system (following subelement 6a through elements 138, 150 and 152),

wherein the second disk controller stores data received from the first disk controller to a third storage area of the second storage system figure 7b element 26 (of T1 snapshot),

wherein, after the first storage system receives a first instruction from the host computer (T1 snapshot command), the first disk controller:

sends to the second disk controller, as received data, first data that is stored in the first storage area at a time when the first instruction was received in figure 7a element 152 (the one near element 16);

receives from the host computer update data corresponding to the first data in figure 7a element 156 subelement 6b; and

manages the update data such that the update data can be distinguished from the first data figure 7a element 160,

wherein the second disk controller stores the received data to the third storage area in figure 7b element 26 (T2 snapshot),

wherein the first disk controller sends a second instruction to the second disk controller in figure 5 element 96 (coinciding with snapshot T2 of figure 7a), and after the second instruction is sent, the first disk controller sends the update data to the second disk controller in figure 7a element 166.

In regards to claim 23, Ohran discloses a first storage system comprising:

a disk controller for receiving data from a host computer figure 3 element 42 and 44; and one or more disks each of which is coupled to the disk controller element 20;

wherein the disk controller stores data received from the host computer to a first storage area of the first storage system in figure 7a element 136 subelement 6a and sends the data to a second storage system (following subelement 6a through elements 138, 150 and 152),

wherein after a first instruction from the host computer is received at the first storage system (T1 snapshot command), the disk controller:

sends to the second storage system, as received data, first data that is stored in the first storage area at a time the first instruction has been received in figure 7a element 152 (the one near element 16);

receives from the host computer update data corresponding to the first data in figure 7a element 156 subelement 6b; and

manages the update data such that the update data can be distinguished from the first data figure 7a element 160,

wherein the disk controller sends a second instruction to the second storage system to make the second storage system hold the first data when transmission of the first data is completed in figure 5 element 96 (coinciding with snapshot T2 of figure 7a) and figure 7a element 166.

In regards to claim 25, Ohran discloses wherein after the first instruction from the host computer is received at the first storage system (T1 snapshot, figure 7a):

the disk controller stores the first data in the first storage area to a second storage area in the first storage system (element 138 and element 22 just below T1);

the disk controller sends the first data stored in the second storage area to the second system, if the first data has not yet been sent to the second storage system element 152, and

the disk controller stores the update data to the first storage area after corresponded first data is stored in the second storage area in figure 7a element 156.

Allowable Subject Matter

Claims 21 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A Baker whose telephone number is (571)272-4203. The examiner can normally be reached on M-F 10am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571)272-4210. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PB

12/10/04

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER